

SoCal Urban Wildlife Refuge Project

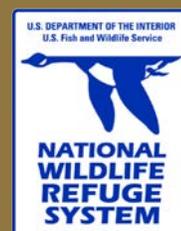
2014 - 2015 Impact Report



A Summary of Actions
and Accomplishments
in support of the
U.S. Fish & Wildlife Service's Urban
Wildlife Conservation Program



**urban
wildlife
refuge**



Foreword

The U.S. Fish and Wildlife Service's Urban Wildlife Conservation Program has thoughtfully and deliberately invested in communicating the vital importance of wildlife conservation to urban audiences. The long-term trend is clear: our country is becoming more diverse and urbanized, requiring us to focus our efforts on engaging urban communities around the significance and importance of conserving and protecting our nation's wildlife heritage and biological richness.

To address that trend, in 2014, the U.S. Fish and Wildlife Service requested proposals from across the United States for educating urban communities about the importance of conservation, offering \$1 million in base funding for FY 2014. The funding was awarded to the San Diego National Wildlife Refuge Complex, which was well positioned for this great challenge, as it now serves the second largest metropolitan area in the United States with over 17 million people—and with a demographic reflecting the nation's projected racial and ethnic mix in 2060. The SoCal Urban Wildlife Refuge Project was born.

This report highlights the work and accomplishments during the first two years of the SoCal Urban Wildlife Refuge Project. It highlights each participating organization's successes in connecting southern California communities to nature, engaging in varied and meaningful programs, and facilitating measureable benefits for the people and communities involved.

Andy Yuen

Project Leader

San Diego National Wildlife Refuge Complex

Background

In 2010, the U.S. Fish & Wildlife Service (USFWS) faced this critical question:

How do we connect the 80% of city dwelling, plugged in Americans with nature, and—by extension—to values centered on conservation and environmental stewardship?

Our response was bold and ground breaking: “Create an urban refuge initiative that defines excellence in our existing urban refuges, establishes the framework for creating new urban refuge partnerships and implements a refuge presence in 10 demographically and geographically varied cities across America by 2015.” Today’s urban refuges bring nature to diverse communities in order to build shared values for wildlife conservation.

Urban areas present a strategic opportunity to reach new audiences and expose them to the USFWS and opportunities to visit USFWS lands. Refuges close to highly-populated areas provide the greatest opportunity to engage new and diverse audiences, whether through an urban refuge or an urban wildlife refuge partnership. Urban Wildlife Refuges provide the unique opportunity to strategically build an urban conservation community that treasures the National Wildlife Refuge System.

Responding to the Charge

Refuge managers in Southern California reflected on the challenge issued by USFWS leadership. In particular, they sought ways to address national and regional efforts to:

- Connect diverse urban youth and adults to nature, thus reversing the current trend of a U.S. population becoming increasingly isolated from nature
- Create ways for individuals to interact with the natural environment by observing wildlife, restoring habitats, learning about nature—to help them gain an appreciation and understanding of what nature offers, and why it should be protected
- Provide opportunities for historically underrepresented young people to explore and develop an interest in Science, Technology, Engineering and Mathematics (STEM) careers
- Empower teachers with an understanding of cutting-edge and creative strategies to share the wonder of science with their students, and develop the next generation of scientists needed in our changing world
- Inspire people to become tomorrow’s stewards of the environment and be aware of their impact on the world around them

What defines an “urban refuge”?



An urban refuge is a wildlife refuge located within 25 miles of a population of 250,000 or more.

The SoCal Urban Wildlife Refuge Project

In 2014, the USFWS requested proposals from refuges across the United States for “getting the word out” about urban refuges and the importance of conservation, offering \$1 million in base funding for FY 2014 and beyond. The San Diego National Wildlife Refuge Complex’s proposal was the first awardee honored by the USFWS. As a result, the SoCal Urban Wildlife Refuge Project (Project)—serving the second largest metropolitan area in the United States with over 17 million people, and with a demographic reflecting the nation’s projected racial and ethnic mix in 2060—was launched.

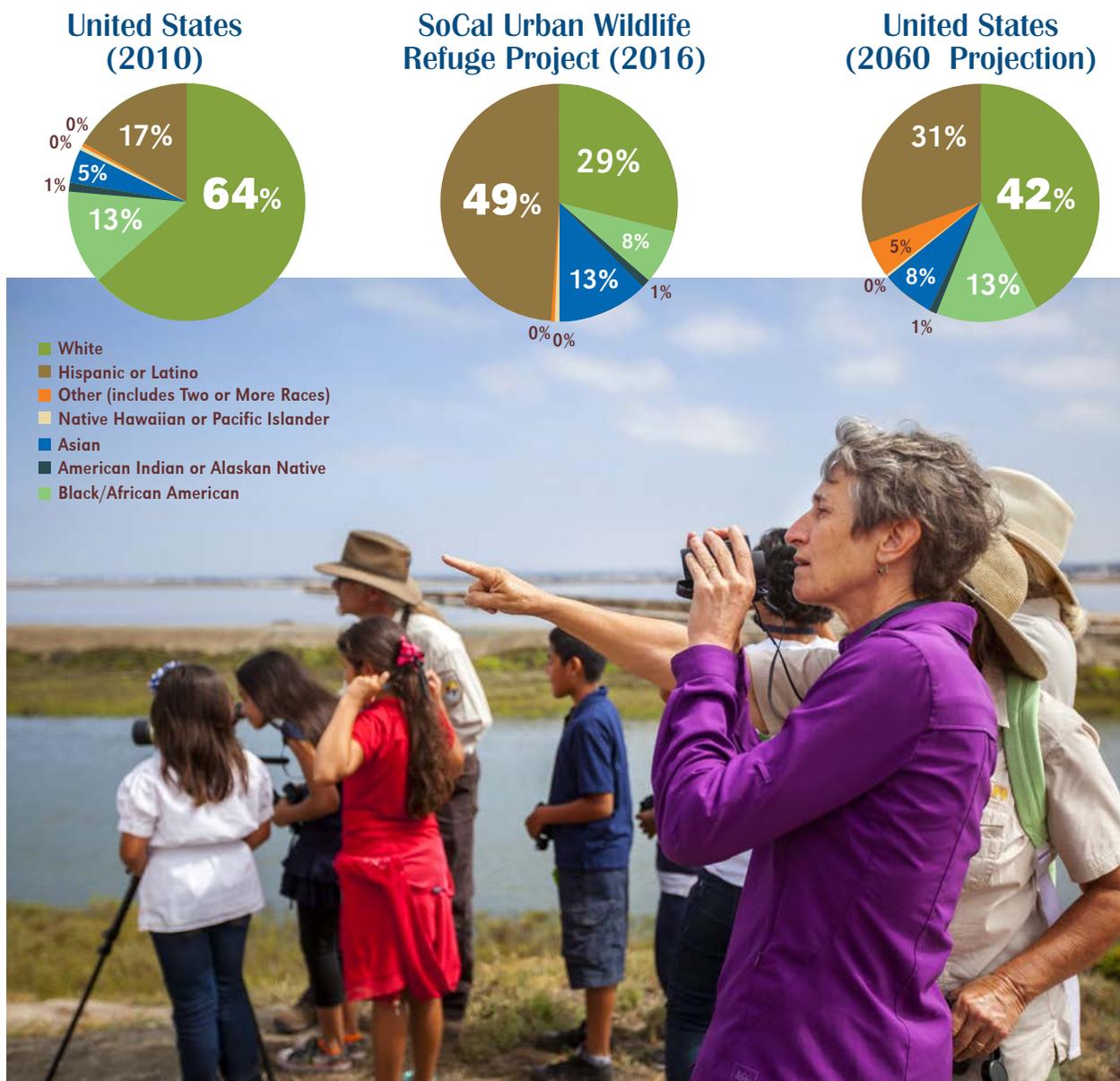


Photo Credit: Ian Shive/USFWS

The Project delivers the message that conserving wildlife and natural habitats sustains healthy communities. Because of the diversity within the project's boundaries, multiple approaches were needed to connect the growing urban population to nature.



Standards of Excellence

To guide the efforts in connecting people with nature, the USFWS created eight Standards of Excellence. These standards provide a foundation for engaging urban communities as partners in wildlife conservation, and are used to guide the portfolio of projects featured in the SoCal Urban Wildlife Refuge Project.

1. Know and Relate to the Community—Understand not only the geographical boundaries of a community, but know the community intimately enough to become part of the community fabric.
2. Connect Urban People with Nature via Stepping Stones of Engagement—Meet urban residents with varying degrees of nature-based skills on their own turf through a wide variety of nature-based programs.
3. Build Partnerships—Share resources and build formal and informal community partnerships with the common goals of land stewardship and conserving natural resources.
4. Be a Community Asset—Improve the quality of a community by providing expertise, time, space, jobs, and involvement in community-based projects.
5. Ensure Adequate Long-term Resources—Make sure that there is adequate and stable funding to support staffing, facilities, maintenance, operations, and changing needs.
6. Provide Equitable Access—Reduce barriers to access due to transportation and physical and financial limitations.
7. Ensure Visitors Feel Safe and Welcome—Educate visitors about what to expect and how to be safe in natural environments.
8. Model Sustainability—Set the standard for the sustainable use of resources and energy conservation, and promote biological diversity through day-to-day decisions and actions.



Through programs connecting urban communities with the great outdoors, the Project expands the reach of the San Diego National Wildlife Refuge Complex at the south, the Los Angeles Urban Wildlife Refuge Partnership, and the Hopper Mountain National Wildlife Refuge Complex, the project's northern boundary.

SoCal Urban Wildlife Refuge Project Partners

The Project provided grants during 2014 and 2015 to the following nature-based community organizations and named projects. The following pages detail the contributions and impact of each project partner.



**OUTDOOR
OUTREACH**

1. Outdoor Outreach:
Adventure Clubs

2. Santa Barbara
Zoo: Condor Kids



3. San Diego Zoo Institute for
Conservation Research:
Outdoor Learning Lab

4. San Diego Zoo Global:
Wildlife Rangers



5. Living Coast Discovery Center:
Wild Wise, Student Scientists
and Teacher STEM Training

6. Friends of the Los Angeles
River—River Rover:
Community and
School Programs





LA CONSERVATION CORPS

Transforming Youth. Enhancing Communities.

7. Los Angeles Conservation Corps: RiverCorps

8. Earth Discovery Institute: Engaging Communities in Stewardship
9. Earth Discovery Institute: Ecology meets Technology



TANDEM

stills + motion

10. Tandem Stills + Motion: Wildlife Photographer and Filmmaker

Urban Wildlife Conservation Program

Standard of Excellence: Building Partnerships

The Urban Wildlife Conservation Program Standards of Excellence provide eight guidelines by which successful programs operate. Standard 3, Build Partnerships, recognizes that successful refuges use formal and informal partnerships with a variety of individuals and organizations within the community to achieve common goals for land stewardship and conservation of natural resources for the benefit of the region.

The organizations featured here served as project partners because they share the goal of connecting people with nature and inspiring them to care about conservation.

SoCal Urban Wildlife Project Involves over 12,000 Individuals and Reaches Many More through Targeted Media

In the calendar years 2014-2015 the project provided \$1.945 million dollars to 10 partner organizations. With our partners, the Project has directly engaged **12,243** students, community members, teachers, refuge visitors, and volunteers through education programs, outreach, and community service opportunities. Through the use of media leveraged in support of the project's efforts, over **2,498,000** media impressions have been made to the SoCal Urban Wildlife Project and its conservation messages.



Throughout the project's initial reporting period:

Youth have been engaged as volunteers—restoring wildlife habitats, connecting with the outdoors and preparing themselves to be the next generation of conservation stewards for the environment.

Teachers from diverse school districts have bolstered their knowledge about broader environment-related concepts and refuge-specific content in order to share what they've learned with students of all ages in the coming years.

Volunteers of all ages and interests have engaged to benefit their communities, and to increase conservation in their regions.

Community members engaged with their local refuge and its project partners have walked away with increased knowledge and appreciation of the programs, refuges, and conservation.



Outdoor Outreach: Adventure Clubs

About

Outdoor Outreach provides youth in San Diego County with opportunities to experience the outdoors through recreation, education and stewardship. Youth who would otherwise not have the opportunity to experience nature try mountain biking, paddle boarding, hiking, surfing—among other activities—and participate in team building activities, leadership training, and stewardship projects including cleanups, native species plantings and storm drain stenciling.

Meeting the Challenge

From February 1 to September 30, 2015, Outdoor Outreach:

- Doubled the impact of the USFWS's funding to run 76 trips to local refuges and adjacent areas—40 more than originally planned
- Connected 524 urban youth to local wildlife refuges
- Engaged more than 60 community volunteers
- Partnered with 28 schools and community organizations
- Highlighted their partnership with the USFWS and the value of the refuge system through communications to 4,000 e-news subscribers, 3,000 Facebook fans, and 2,800 web site visitors each month

Impact

Outdoor Outreach surveyed participants before and after each outing to measure the project's success in increasing their knowledge of and attitudes towards USFWS refuges. They found that:

- Participation in the program increased the number of youth who were (a) aware of what a National Wildlife Refuge is; and, (b) aware of the USFWS.
- 57% of participants visited a National Wildlife Refuge for the first time during the program.
- 73% of participants reported that they wanted to visit a National Wildlife Refuge again.

“Notably, the project exposed youth to the possibility of getting careers in resource management. As a direct result of this exposure, two of Outdoor Outreach’s teen participants were inspired to apply for the 2016 Environment for the Americas Internship Program to work on the San Diego Refuge Complex.”

Ben McCue
Executive Director
Outdoor Outreach

Bringing New Visitors to the Refuge



New Visitors Seek Return Visits





Santa Barbara Zoo: CondorKids

About

CondorKids is a joint project of the SoCal Urban Wildlife Refuge Project, Hopper Mountain National Wildlife Refuge Complex, Ventura Fish and Wildlife Office, Santa Barbara Zoo, and Cornell Lab of Ornithology. Its aim is to increase the public's awareness of the USFWS's efforts to recover

populations of the endangered California condor. The program engages urban students and surrounding communities to learn about and participate in conservation efforts for the California condor.

Meeting the Challenge

Through extensive research and collaboration between Filmore Unified School District (FUSD) teachers, Ventura Fish and Wildlife Office staff members and Santa Barbara Zoo staff, the CondorKids project:

- Created a comprehensive California Condor curriculum for 3rd grade students that includes modules in biology, geography, history and conservation
- Completed a teacher resource web portal containing digital lessons, videos, photos, and templates for activities, which continues to be improved through ongoing teacher feedback



- Invited conservation biologists to conduct seven classroom visits and two full-day in-service trainings for 3rd grade teachers on the Condor Recovery Program
- Launched two live streaming condor nest cameras that can be monitored at the district's four elementary schools
- Organized field trips to Hopper Mountain and Bitter Creek Refuges and Santa Barbara Zoo for six classes

Raising Awareness: Over the course of the project, the number of people visiting project's Facebook page increased by almost **800%**



Impact

- The summer 2015 pilot phase served 150 students; in 2015-2016, all FUSD 3rd graders will experience the curriculum.
- Students attending the summer pilot sessions demonstrated evidence of a conservation ethic during discussions with project leadership and had positive engagements with wildlife biologists through seven classroom visits, a school-wide assembly, and field trips to Hopper Mountain and Bitter Creek Refuges, and the Santa Barbara Zoo.
- Teachers have shown enthusiasm for the curriculum and are eager to use it in their classrooms.
- CondorKids was awarded the 2016 Superintendent's Award for Excellence in Education.
- Marketing and outreach efforts including blog posts and awareness day events at Santa Barbara Zoo have increased local interest in condor recovery efforts.
- The number of visits to the Condor Cave Facebook page increased from 514 "likes" in February 2013 to 4,447 likes in December 2015 (and continues to rise), demonstrating the sharing of knowledge and project accomplishments.

What's next

- Continued development of the "Condor Country" mobile app game
- Continued refinement of the curriculum to address English learner strategies
- Developing resources about native plants and animals
- Expanding the curriculum to additional grade levels



San Diego Zoo Institute for Conservation Research: Outdoor Learning Lab



About

San Diego Zoo Global’s vision is to lead the fight against the extinction of species. Within the organization’s Institute for Conservation Research, the Conservation Education Division fosters ecological literacy and stewardship by building capacity within communities to support species conservation and coexistence between humans and nature. The Division is dedicated to connecting teachers and students to conservation science through hands-on, authentic experiences using the same tools and instruments as they work with conservation scientists and engage in innovative research experiences in the lab and in the field.

Meeting the Challenge

The San Diego Zoo Institute for Conservation Research, the research arm of the Zoo and home base of the Conservation Education Division, has established programs for 6-12th grade students, college and graduate students, teachers, researchers, and regional scientists with the goal to train new generations of conservation scientists. In 2015, the USFWS provided funds for 20 high school science teachers from Los Angeles and San Diego Counties to experiment with



sophisticated scientific tools and techniques with world-renowned experts in wildlife conservation. Teachers:

- Performed lab testing, explored the global wildlife implications of climate change and habitat destruction, learned

Gains in Teacher Content Knowledge

PRE-TEST  39%

POST-TEST  79%

"This workshop has given me curriculum, materials, talking points, and, most importantly, experiences and enthusiasm that I cannot wait to share with my students!"

A Teacher

about microtrash and lead poisoning problems in California condors, and explored field-based research techniques

- Monitored biodiversity in the Institute's Eddy Family Outdoor Learning Lab, getting a firsthand look at the many conservation projects in Southern California
- Engaged with research scientists from the Institute for Conservation Research
- Applied what they learned to teaching Next Generation Science Standards and incorporating fields such as engineering, computer science, bioacoustics, and environmental studies into lessons in biology and conservation

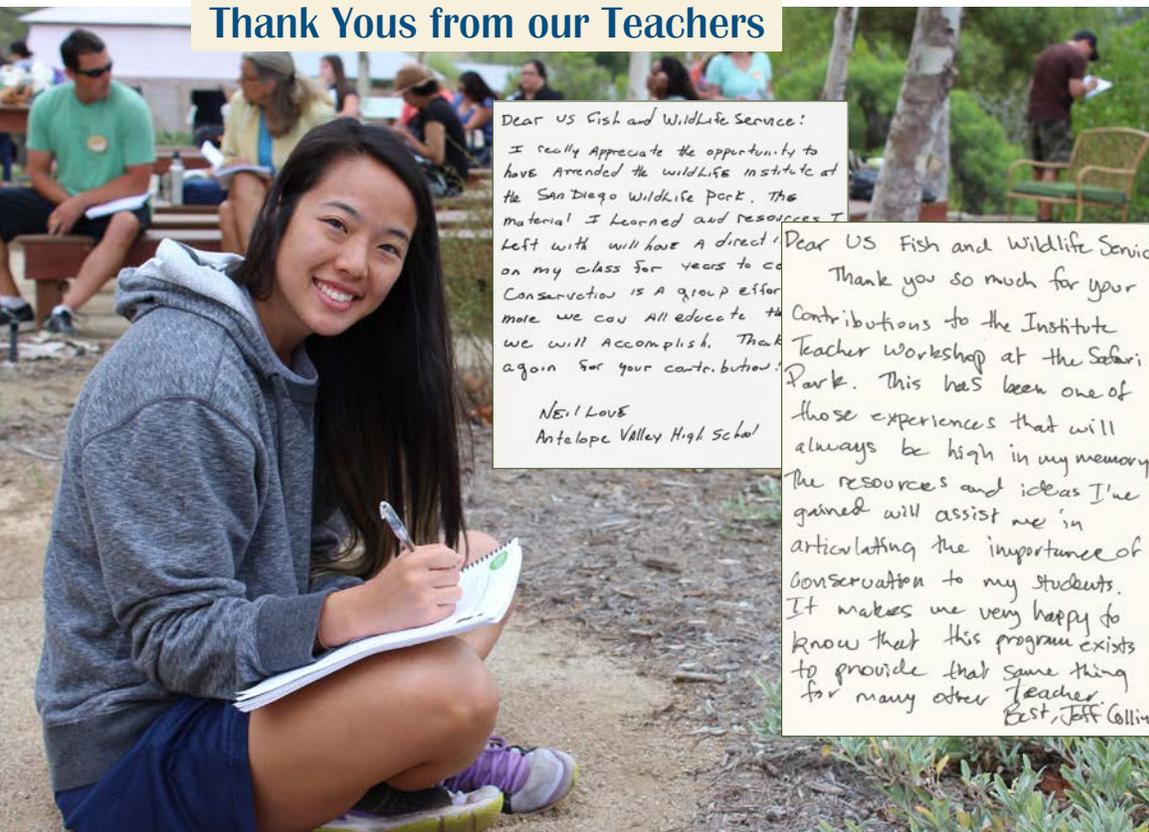
Impact

- Teachers gave the program an overall rating of 9.6, on a 10-point scale.
- There was an average overall increase of 40% in teachers' content/objective knowledge between pre- to post-assessment—meaning they essentially doubled their content knowledge.

What's Next

- Over 1,000 students from 20 schools that serve low-income students in San Diego and Los Angeles will engage in the Outdoor Learning Lab and the Life in a Biodiversity Hotspot interactive field research curriculum.
- Students will visit the San Diego Zoo Safari Park to observe endangered species and see current field research in action.

Thank You from our Teachers



Dear US Fish and Wildlife Service:
I really Appreciate the opportunity to have Attended the wildlife institute at the San Diego Wildlife Park. The material I learned and resources I left with will have A direct impact on my class for years to come. Conservation is A group effort, more we can All educate the more we will Accomplish. Thank you again for your contribution.
Nesli Love
Antelope Valley High School

Dear US Fish and Wildlife Service
Thank you so much for your Contributions to the Institute Teacher Workshop at the Safari Park. This has been one of those experiences that will always be high in my memory. The resources and ideas I've gained will assist me in articulating the importance of Conservation to my students. It makes me very happy to know that this program exists to provide that same thing for many other teachers.
Best, Jeff Collins

Dear Members of the U.S. Fish and Wildlife Service,
I cannot thank you enough for supporting the teacher workshop in conservation science at the San Diego Zoo. This experience can only be described as a once in a lifetime opportunity. As a teacher my goal is to make a difference in the world and I feel much better equipped to do so after my time at this workshop. I'm more knowledgeable, I have more first hand experience in this field and my passion for conservation has been renewed and recharged. I cannot wait to bring new lessons and experiences to my students with the hope that they will remember what they've learned and share these ideas with their families and friends throughout their lives. On a personal note, I feel so fortunate to have participated in this workshop and I can honestly say that it has been a true highlight in both my teaching career and in my life in general.
Thank you so very much!
- Jennifer

Living Coast Discovery Center:

Wild WISE, Student Scientists and Teacher STEM Training

About

The Living Coast Discovery Center is a nonprofit zoo and aquarium located on the San Diego Bay National Wildlife Refuge. The Living Coast connects people with coastal animals, plants and habitats and encourages them to explore the coastal region. The San Diego National Wildlife Refuge Complex partnered with the Living Coast to develop a Student Scientist Series presented to local schools and organizations, with the goal of building students' science, technology and engineering skills.

Meeting the Challenge

The Student Scientist Series exposed hundreds of young people to the refuge and offered hands-on and mentor-based programs to build science and technology skills in students and teachers alike.

- The Wild Women In Science and Engineering (Wild WISE) Overnight Adventure program included workshops designed to give students a hands-on, interactive view into careers in the wildlife, environmental and scientific fields. Girls with the following organizations participated: Girl Scouts of San Diego, Hermanitas MANA de San Diego, San Diego Science Alliance and Wilson Middle School.
- As a prelude to exploring the Mariana Trench Marine National Monument, the SeaPERCH ROV program provided students in grades 6 -12 with the training and skills needed to build an underwater Remotely Operate Vehicle (ROV). The students used the ROV to recover lost objects, cap loose equipment, and perform species counts underwater in the Living Coast's 22,000-gallon shark tank, giving them a view of how ROVs could be used in real world careers. The program also covered STEM careers and careers available in the Department of the Interior.
- Living Coast held two days of training for teachers to implement the SeaPERCH ROV program in their classrooms.
- The Center created specialized field trip programs that teach students about the refuge and allow them to spend most of their field trip time exploring and learning about a certain aspect of the refuge.

Impact

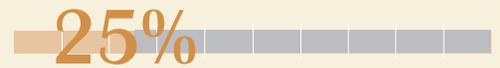
- Living Coast held five Wild WISE Outdoor Adventure events that reached 305 students, 57 adults, and 5 teachers.
- From April to May 2015, 138 students built and launched ROVs in the shark tank at the Discovery Center.
- The Center provided STEM training for 16 teachers.
- 88% of the young women from Hermanitas MANA had a “high” overall impression of the Wild WISE program, and 13% said they were interested in the careers presented during the program.
- After the Wild WISE program, the number of girls interested in working in the field of science rose from 9 to 23—a 40% increase.

What's Next

- Host several teacher trainings to bring the total number of teachers trained to 80
- Reach an additional 90 students in the SeaPERCH ROV program
- Change Wild WISE to Wild REC (Refuge Engaged Careers) to engage students of all genders, and reach 160 students and 60 adults
- Promote the growth of the Refuge field trips to serve 77 classes (about 2,300 students)
- Use existing curriculum and support from the USFWS to leverage additional sources of funding

Percentage of Girls Interested in Science-related Careers Before and Following the Program

BEFORE



AFTER





San Diego Zoo Global: Wildlife Rangers

About

San Diego Zoo Global is a conservation organization dedicated to the science of saving endangered species worldwide by uniting its expertise in animal care and conservation science with its dedication to inspiring passion for nature. San Diego Zoo Global's Education Department offers summer camps, wildlife sleepovers, programs for kids and teens, and training for teachers.

Meeting the Challenge

Wildlife Rangers is a two-part summer program resulting from collaboration among San Diego Zoo Global, South Bay YMCA and San Diego Bay National Wildlife Refuge. The program supports the YMCA's focus on three key elements of strengthening communities—nurturing the potential of children, encouraging healthy lifestyles, and supporting their neighbors—by teaching children about stewardship, responsibility and engagement.

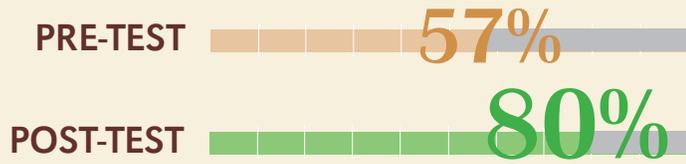
The “Wildlife Rangers” program targeted children ages 6 -12 at these four South Bay YMCA sites: Chula Vista, Hendenkamp, National City and San Ysidro.

All children participated in a 1.5 hour assembly where they learned about the importance of wildlife refuges and participated in activities to test their Wildlife Ranger skills.

Older students took a field trip to the San Diego Bay National Wildlife Refuge and:

- Took a guided tour with USFWS Rangers and Zoo staff
- Restored habitat by planting milkweed for Monarchs and pollinator-friendly native plants on the refuge
- Rotated through three discovery stations—Track and Scat, Bird Bingo, and Beach Clean-up
- Experienced firsthand some of the job responsibilities of Refuge Rangers
- Learned to help protect wildlife by recycling and growing native plants

Percentage of Students Correctly Defining the term “Refuge” Before and Following Program



Impact

- During June and July 2015, 840 children from the four YMCA sites attended 14 assembly programs presented by a Zoo Educator and the Zoo’s zany researcher character, “Dr. Zoolittle.”
- Of those 840 children, over 600 participated in the field trip to San Diego Bay National Wildlife Refuge.
- After attending the assembly, there was a 23% increase in the number of students who correctly answered that a refuge is an area designated for wildlife protection.



“The crab hunt was a stand-out—it was informational and hands on.”
– A YMCA Counselor

“When you see the YMCA kids in the classroom and then the next day out in nature... they just seem more like themselves.”
– Dr. Zoolittle



Friends of the Los Angeles River—River Rover: Community and School Programs

About

The Friends of the Los Angeles River (FoLAR) River Rover is a mobile visitor and education center that “brings the river to the people and the people to the river.” The Rover meets audiences where they are—within their schools and communities—to educate them about the unique wildlife resources right in their back yards.

Meeting the Challenge

The San Diego Refuge Complex partnered with FoLAR to support their education and outreach programs throughout the Los Angeles River watershed. The goal of the River Rover is to educate and engage audiences who may not be comfortable going to the River, or are unsure how to get there. In 2014 - 2015, FoLAR:

- Hosted 18 community events including nature walks, bike rides, studies, an art walk, and events at “The Frog Spot,” a community gathering space and launch pad for River tours and trips, and performance venue
- Supported three cleanups at three locations along the River
- Sent the River Rover to 52 community events
- Conducted a Source to Sea Watershed Education program at 26 elementary, middle and high schools and one college campus

Impact

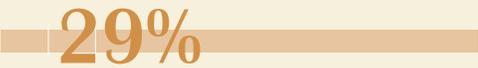
- The 21 community events and cleanups hosted 2,799 participants.
- 5,553 people visited the River Rover at community events.
- The Source to Sea Watershed Education Program reached 2,123 students, who each received nine hours of instruction through two in-class lessons, a River Rover visit and a field trip to North Atwater Park. The students served represented a cross-section of Los Angeles’ diverse community.
- On average, students answered 29% of the pre-test assessment items correctly; after completing the Sea to Watershed Education program, students increased their proficiency on the post assessment by 44%, with an average post-test score of 73%.



Photo Credit: Ian Shive/USFWS

Average Percent Correct on Project Assessment Test

PRE-TEST



POST-TEST



What's next

- FoLAR and the Los Angeles Conservation Corps are in the planning stages to implement 15 educational field trips with the River Rover on the Los Angeles River.
- FoLAR and the USFWS are planning to implement five education events in partnership with the Los Angeles School District's Schoolyard Habitat Program.
- Partner with high school educators to develop a more comprehensive high school curriculum targeting Common Core and National Standards.
- Partner with Los Angeles River School to take 15 tenth grade students from Northeast Los Angeles to an education program at Mono Lake.
- Create an activity book for visitors and schools that includes a native plant and bird field guide and a review of River history.

Los Angeles Conservation Corps: River Corps

About

Los Angeles Conservation Corps—River Corps provides at-risk young adults and school-aged youth with job skills training, education and work experience with an emphasis on conservation and service projects that benefit the community.

Meeting the Challenge

To optimize the available natural environment around the Los Angeles River and engage the community in preserving this space, the River Corps hired a crew of six inner city, at-risk young adults (ages 18-25) and trained them in environmental education, community outreach, and habitat restoration.

The River Corps served as River Ambassadors and led community outreach activities including cleanups intended to connect the community with the natural environment.

The Corps crew:

- Restored sections of the Los Angeles River
- Cleaned up sites along a seven-mile river corridor by removing litter and graffiti, hauling away bulky items, and removing invasive vegetation
- Received training in watershed habitat, native landscaping, biodiversity, endangered species, water quality management, invasive species, and conservation
- Learned about the history of the Los Angeles River
- Toured sites including the Los Angeles River Center & Gardens, Hyperion Water Treatment Plant, Los Angeles Natural History Museum, and LA Conservation Corps nursery at Griffith Park

Impact

Over a 10-month period, the River Corps:

- Maintained 147,669 linear feet along the Los Angeles River
- Removed 39,300 square feet of graffiti, 162,703 square feet of invasive vegetation, 360 bulky items, and 51 tons of debris
- Cleaned out 62 storm drains

“I was hesitant about the River Corps project at first, but as the days went by I started to learn new things and I realized how important we are to our environment and how it is to us. After having the opportunity to work as a River Corps member, there may be a possibility that an environmental job awaits me.”

— A River Corps Crew Member



Photo Credit: Ian Shive/USFWS

- Attended one forum on Environmental Justice and four workshops covering biodiversity, macro-invertebrates, invasive species, and drought
- Organized and/or participated in 13 events including the annual LA River Clean Up, Field Trip Wednesdays, and a tribal blessing and groundbreaking ceremony for the LA River Greenway Trail Project

What's Next

- Receive bird survey training from National Wildlife Refuge staff to assist with habitat, water quality and wildlife surveys
- Receive training from National Wildlife Refuge Staff to develop skills for conducting nature-based educational activities promoting community involvement and long-term stewardship of the open spaces along the River

River Corps – By the Numbers

147,669

Linear feet maintained along the river



39,300

Square feet of graffiti removed



62 Storm drains cleaned

51 Tons of debris removed from the river area



Earth Discovery Institute: Engaging Communities in Stewardship

About

The Earth Discovery Institute (EDI) partners with government agencies and nonprofit organizations to preserve and restore habitats in San Diego County's foothills and watersheds.

Meeting the Challenge

The San Diego National Wildlife Refuge Complex partnered with the Earth Discovery Institute to build public understanding of the purposes and value of habitat conservation in San Diego's National Wildlife Refuges and other conserved lands near urban areas through interpretive events, volunteer stewardship activities, and outreach efforts to new communities. Outreach activities included:

- 24 interpretive events including Hike with a Ranger, Earth Day, Volunteer Patrol Training, and refuge-based events with youth from San Diego County Parks and Recreation Teen Centers. The refuge-based events featured a new native habitat area near an elementary school in a park-poor community, a booth at the "It's How We Live Community Fair" with wildlife/wildlands displays and hands-on activities targeted toward diverse families, and a summer program for 12-17 year olds in the San Diego Parks and Recreation summer teen program.
- 10 one-time volunteer events including a clean-up, Hanson Pond Restoration, and graffiti abatement
- 89 events focusing on priority species/habitats including coastal sage scrub, native grasslands, oak riparian, and Quino checkerspot butterfly habitat





Impact

- Reached 981 participants in events targeted specifically to urban communities, totaling 921 hours of participation
- Reached 262 participants at one-time volunteer events totaling 766 hours of participation
- Nine long-term volunteers and five partner agencies completed 679 hours of conservation service
- 500 hours of outreach in events to new, nearby urban communities that reached 717 participants, including 152 elementary school students primarily comprised of Middle Eastern and African refugees



Earth Discovery Institute: Ecology meets Technology

About

The Earth Discovery Institute (EDI) partners with government agencies and nonprofits to preserve and restore habitats in San Diego County's foothills and watersheds.

Meeting the Challenge

The San Diego National Wildlife Refuge Complex partnered with the Earth Discovery Institute to build a corps of young technology-savvy environmental stewards through Ecology Meets Technology, a pilot program integrating technological tools with science curriculum, environmental restoration and civic responsibility. The program targeted two elementary schools in the South Bay Union School District in the City of Imperial Beach and included classroom visits, field trips to San Diego Bay National Wildlife Refuge and the San Diego National Wildlife Refuge, and a capstone outreach tool.

During the classroom portion of the program, the students:

- Observed native animals
- Learned about what comprises a healthy habitat
- Explored careers in wildlife and habitat conservation
- Applied programs/apps they would be using in the field to observe and identify native birds
- Created nature-themed art work

During the field visits, students:

- Learned about water quality and studied organisms that are predictors of low water quality
- Used app and tablet technology to enter and share data about local native plant and animal species they observed
- Restored an area with coastal sage scrub plants
- Hiked with EDI field instructors and observed native and non-native plants

100
art
projects



333
students
reached



- Practiced observing birds using binoculars
- Used a weather app to help them prepare for a day of hiking outdoors
- Observed molds of tracks, model scat and skulls of local animals
- Learned about animal adaptations from a live animal presentation featuring a Rosy Boa and Bearded Dragon
- Created a unique piece of art reflecting their outdoor experiences

1,272
experiences
for students

The program at Bayside Elementary School, a campus that shares a boundary with the San Diego Bay National Wildlife Refuge, ended with a capstone project in which students created artwork reflecting their experiences.

Impact

- At Bayside Elementary, the project served 153 students, including 70 4th graders, 68 5th graders, and 15 3rd-5th grade Special Day students for a total of 912 unique learning experiences (with some students participating in multiple experiences).
- At Kempton Elementary, 95 4th graders and 85 5th graders received one classroom and one field visit for a total of 360 unique learning experiences.
- Combined, the two programs served 333 students, with 1,272 unique learning experiences (with some students participating in multiple experiences).
- The tablets helped students improve their skills in using technology in nature, and to apply those skills usefully in other areas.
- At Bayside Elementary, students created over 100 art projects, 50 of which were included in a school-wide display.

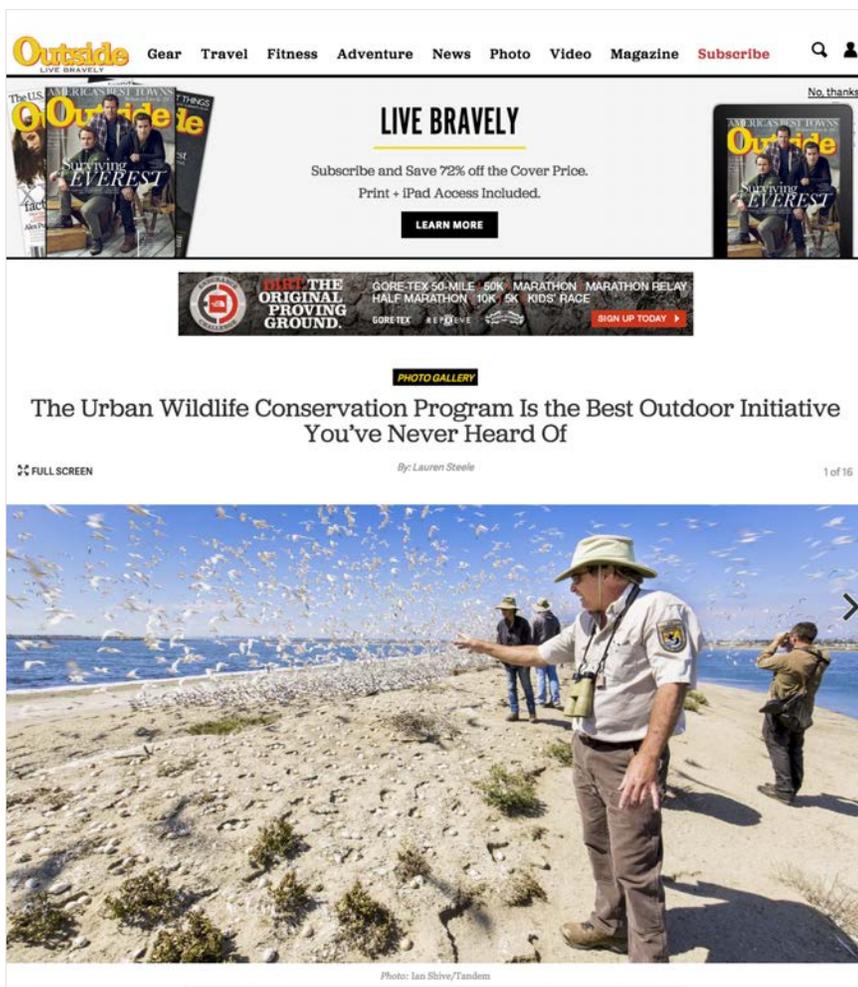
Tandem Stills + Motion: Wildlife Photographer and Filmmaker

About

Ian Shive is an Ansel Adams Award-winning conservation photographer, author, and film and television producer who has worked with The Nature Conservancy, Sierra Club, Environmental Defense Fund, National Wildlife Refuge Association and National Parks Conservation Association. He founded Tandem Stills + Motion, Inc., one of the world's leading collections of licensable photographs and motion clips for the outdoors.

Meeting the Challenge

The San Diego National Wildlife Refuge Complex and conservation partners worked with Tandem Stills + Motion to create a multimedia brand for Urban Wildlife Refuges and Partners in order



to inspire urban audiences and connect them to nature. Mr. Shive and his production team, Tandem Stills + Motion, created online, print and video content including:

- A library of photos and videos of urban refuges and people enjoying them
- A six-part web series highlighting the diversity and importance of urban refuges
- A feature interview and link to a condor video for the *Santa Barbara Independent*
- Online content and Facebook posts for backpacker.com, outsideonline.com, Outdoor Industry Association, San Diego Audubon, National Association of Travel Journalists, and Latino Heritage
- Video footage for local TV broadcast stations

- A public presentation at the Smithsonian Museum as part of the Smithsonian Associates program in November, 2015
- A special screening of Mr. Shive's SoCal Urban Wildlife Refuges film series at the Telluride Photo Festival

Impact

- Reached millions of outdoor recreation enthusiasts with the six-part web series beginning on September 29, 2015. The series was also featured on the Outdoor Industry Association web site.
- A Public Broadcasting feature targeting Southern California stations that will air in high rotation
- An Urban Refuge photo feature in the March/April issue of the Sierra Club's *Sierra Magazine*, titled "Wildlife Refuges are Retreats for People, Too" reached 555,000 paid subscribers and 460,000 Facebook followers, and generated 400,000 monthly page views.
- Reached a circulation of 135,000 with the feature interview in the *Santa Barbara Independent*
- Reached a circulation of 40,000 with an article in the *Ventura County Reporter*
- The photo slideshow and write-up titled "The Urban Wildlife Conservation Program is the Best Outdoor Initiative You've Never Heard Of" was posted on outsideonline.com and its Facebook (468,268 likes), Instagram (236,000 followers) and Twitter (190,000 followers) channels.

What's Next

- An online feature, photo gallery and video placement in *National Geographic* and *Sunset Magazine*
- A story on Bing.com's home page
- An online and print feature in *Audubon Magazine*
- Videos airing on The California Channel



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CLOSE TO HOME

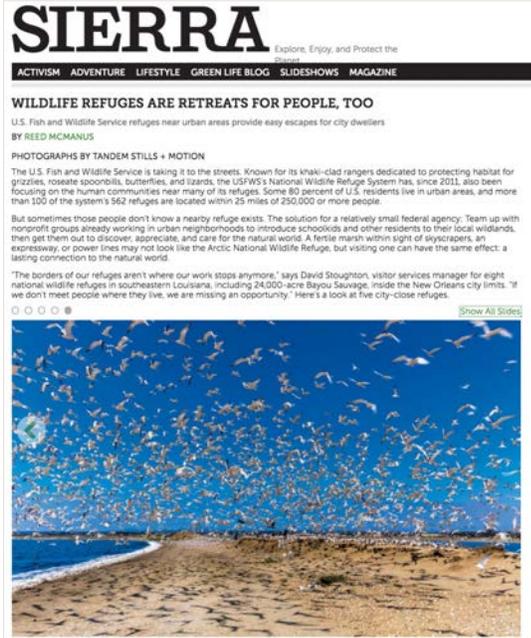
Courtesy Tandem Stills + Motion

Paddles Meet Pavement in Southern California's National Wildlife Refuge

Despite heavy development since the 1930s, parts of the L.A. River still flow freely through heavily populated cities and deliver close-to-home recreation opportunities to 9 million urban residents.

By Kristen Pope

When Southern California residents think of the Los Angeles River, most think of pavement and fences. That's because 80 percent of the waterway—which was once home to steelhead trout and grizzly bears—has been paved since the 1930s. But the L.A. River still provides ample opportunities for urban residents to connect with nature, and it is an especially valuable resource because it passes near the homes of nearly 9 million Southern California residents.



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WILDLIFE REFUGES ARE RETREATS FOR PEOPLE, TOO

U.S. Fish and Wildlife Service refuges near urban areas provide easy escapes for city dwellers

BY REED MCMANUS

PHOTOGRAPHS BY TANDEM STILLS + MOTION

The U.S. Fish and Wildlife Service is taking it to the streets. Known for its khaki-clad rangers dedicated to protecting habitat for grazers, rosette spoonbills, butterflies, and lizards, the USFWS's National Wildlife Refuge System has, since 2011, also been focusing on the human communities near many of its refuges. Some 80 percent of U.S. residents live in urban areas, and more than 100 of the system's 362 refuges are located within 25 miles of 250,000 or more people.

But sometimes those people don't know a nearby refuge exists. The solution for a relatively small federal agency: Team up with nonprofit groups already working in urban neighborhoods to introduce schoolkids and other residents to their local wildlands, then get them out to discover, appreciate, and care for the natural world. A fertile marsh within sight of skyscrapers, an expressway, or power lines may not look like the Arctic National Wildlife Refuge, but visiting one can have the same effect: a lasting connection to the natural world.

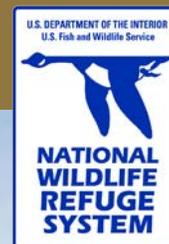
"The borders of our refuges aren't where our work stops anymore," says David Stoughton, visitor services manager for eight national wildlife refuges in southeastern Louisiana, including 24,000-acre Bayou Sauvage, inside the New Orleans city limits. "If we don't meet people where they live, we are missing an opportunity." Here's a look at five city-close refuges.

Show All Slides

SAN DIEGO BAY NATIONAL WILDLIFE REFUGE, CHULA VISTA, CALIFORNIA



urban wildlife refuge



In just 18 months, the SoCal Urban Wildlife Refuge Project has established partnerships with organizations, reaching 12,243 southern California residents with programs highlighting conservation and opportunities to connect with nature. The Refuge project also reached an additional 2,498,000 individuals through key messages delivered through a variety of media.

The sum total of these funded efforts has made an indelible mark on the southern California region. Among the outcomes: students are learning about the California Condor's environment and conservation efforts for the majestic bird; teachers are bolstering their knowledge about conservation as they teach our next generation of conservation stewards; a group of at-risk youth are engaged in conservation work around the Los Angeles River and making a difference for their community and their futures.

The SoCal Urban Wildlife Refuge project continues today and into the future with the commitment to continuously evaluate and improve the work being done, and to monitor the outcomes achieved through this important, future-oriented work.



Photo Credit: Ian Shive/USFWS

The SoCal Urban Wildlife Refuge Project staff can be reached at:

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